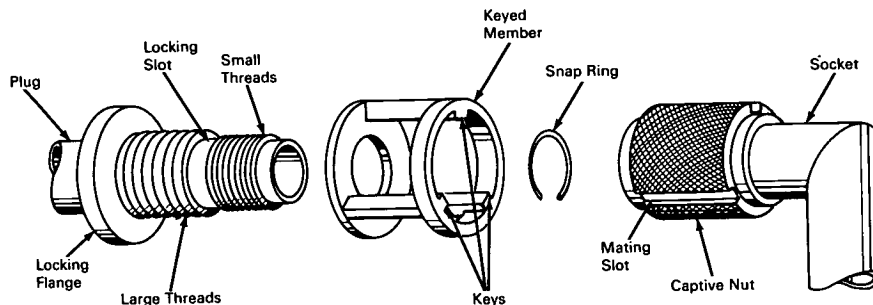


NASA TECH BRIEF



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Keyed Plugs and Sockets Prevent Improper Connections



The problem: In the connection of multiples of plugs and sockets in an electrical system of mating assemblies it is necessary that the right plug be mated with the right socket in each case to avoid damage to or malfunction of equipment. Color coding, especially in hard-to-get-at places where vision is obscured or blocked, is not entirely adequate.

The solution: Plugs and mating sockets that are individually keyed so that no plug can be mated with other than its proper matching socket.

How it's done: The connector consists of a plug, keyed member, snap ring, and socket. The keyed member slips over the small threads of the plug but is stopped against the large threads where it is held in place by the lock ring in the slot. The socket is equipped with a captive nut that is slotted to match the three keys of the keyed member. The plug and socket cannot be joined until the mating slots of the captive nut slide

over the keys of the keyed member sufficiently for the small threads of the plug and the threads of the captive nut to become engaged. When the captive nut has been drawn up tight (the keyed member revolves with it), the locking flange is then drawn up on the large threads of the plug until it bears against the keyed member and effectively locks the assembly together.

Note: This device may be useful in automotive or aircraft applications where precise multiple connections must be made.

Patent status: Title to this invention has been waived under the provisions of the National Aeronautics and Space Act (42 U.S.C. 2457 (f)), to McDonnell Aircraft Corporation, Box 516, St. Louis, Missouri, 63166.

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